SAFETY DATA SHEET

Classified as hazardous according to criteria of WorkSafe New Zealand

Section 1 - Identification

Product Name **Sodium chlorite**

Synonyms Alicide LD; Chlorous Acid, Sodium SAlt (8CI, 9CI)

Product Code	**ACR22323, AJA1684, ALF014265, TCH1684**
Address	Thermo Fisher Scientific New Zealand Ltd 244 Bush Road, Albany, Auckland, New Zealand
Emergency Tel.	**CHEMTREC®** **09 980 6780 or +64 9 980 6780**
Telephone / Fax Numbers	Tel: 09 980 6700 Fax: 09 980 6788
E-mail address	NZinfo@thermofisher.com

Recommended Use Laboratory chemicals.

Section 2 - Hazard(s) Identification

Classification under Work Safe New Zealand

5.1.1A - Oxidising substances that are liquids or solids: high hazard
6.1C - Substances that are acutely toxic (Oral)
6.1B - Substances that are acutely toxic (Dermal)
8.2B - Substances that are corrosive to dermal tissue
8.3A - Substances that are corrosive to ocular tissue
6.9B - Substances that are harmful to human target organs or systems
9.1A - Substances that are very ecotoxic in the aquatic environment
5.1.1B - Oxidising substances that are liquids or solids: medium hazard
6.1B - Substances that are acutely toxic (Inhalation)
6.5B - Substances that are contact sensitisers
6.8A - Substances that are known or presumed human reproductive or developmental toxicants
9.2A - Substances that are very ecotoxic in the soil environment
9.3B - Substances that are ecotoxic to terrestrial vertebrates

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HSNO Approval Number **HSR001349**

GHS Classification

Physical hazards

Oxidizing solids	Category 1 Category 2

Health hazards

Acute Oral Toxicity	Category 3
Acute Dermal Toxicity	Category 2
Acute Inhalation Toxicity - Dusts and Mists	Category 2

Skin Corrosion/irritation	Category 1 B
Serious Eye Damage/Eye Irritation	Category 1
Skin Sensitization	Category 1
Reproductive Toxicity	Category 1
Specific target organ toxicity - (repeated exposure)	Category 2

Environmental hazards

Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 1

Label Elements

Signal Word **Danger**

Hazard Statements
H271 - May cause fire or explosion; strong oxidizer
H301 - Toxic if swallowed
H310 - Fatal in contact with skin
H314 - Causes severe skin burns and eye damage
H373 - May cause damage to organs through prolonged or repeated exposure
H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects
H272 - May intensify fire; oxidizer
H330 - Fatal if inhaled
H317 - May cause an allergic skin reaction
H360 - May damage fertility or the unborn child
H421 - Very toxic to the soil environment
H432 - Toxic to terrestrial vertebrates

Precautionary Statements
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P220 - Keep/Store away from clothing/ combustible materials
P221 - Take any precaution to avoid mixing with combustibles
P262 - Do not get in eyes, on skin, or on clothing
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
P283 - Wear fire/ flame resistant/ retardant clothing
P302 + P350 - IF ON SKIN: Gently wash with plenty of soap and water
P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P306 + P360 - IF ON CLOTHING: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes
P310 - Immediately call a POISON CENTER or doctor/ physician
P330 - Rinse mouth
P331 - Do NOT induce vomiting
P353 - Rinse skin with water/ shower
P363 - Wash contaminated clothing before reuse
P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction
P371 + P380 + P375 - In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

P405 - Store locked up
P501 - Dispose of contents/ container to an approved waste disposal plant

Other information

Contact with acids liberates very toxic gas Corrosive to the respiratory tract

Section 3 - Composition and Information on Ingredients

Component	CAS-No	Weight %
Sodium chlorite	7758-19-2	70-90
Sodium chloride	7647-14-5	5 - 10
Sodium carbonate	497-19-8	5 - 10
Sodium sulfate	7757-82-6	< 5
Sodium hydroxide	1310-73-2	< 1
Sodium chlorate	7775-09-9	< 1

Section 4 - First Aid Measures

Inhalation
Move to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

Ingestion
Do not induce vomiting. Call a physician or Poison Control Center immediately.

Skin Contact
Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

Eye Contact
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

General Advice
Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Self-Protection of the First Aider
Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

First Aid Facilities
Eyewash, safety shower and washroom.

Most important symptoms and effects
Causes burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

Notes to Physician
Treat symptomatically.

Section 5 - Fire Fighting Measures

Suitable Extinguishing Media
Carbon dioxide (CO_2). Foam. Dry chemical. Chemical foam. CO_2, dry chemical, dry sand, alcohol-resistant foam.

Extinguishing media which must not be used for safety reasons
No information available.

Hazardous Combustion Products
Hydrogen chloride gas, Sodium oxides.

Decomposition Temperature
180 °C

Specific Hazards Arising from the Chemical
The product causes burns of eyes, skin and mucous membranes. Oxidizer: Contact with combustible/organic material may cause fire. May ignite combustibles (wood paper, oil, clothing, etc.). Do not allow run-off from fire fighting to enter drains or water courses.
Special protective equipment and precautions for fire fighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

Section 6 - Accidental Release Measures

Emergency procedures
Use personal protective equipment. Evacuate personnel to safe areas. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid dust formation.
Environmental Precautions
Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

Methods for Containment and Clean Up
Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation. Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Sweep up and shovel into suitable containers for disposal.
Reference to Other Sections
Refer to protective measures listed in Sections 8 and 13.

Section 7 - Handling and Storage

Precautions for Safe Handling
Do not get in eyes, on skin, or on clothing. Wear personal protective equipment. Use only under a chemical fume hood. Do not ingest. Do not breathe vapors/dust. Avoid dust formation. Keep away from clothing and other combustible materials.

Conditions for Safe Storage, Including any Incompatibilities
Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Do not store near combustible materials. Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area. Store under an inert atmosphere. Protect from moisture.

AS/NZS 2243.10:2004, Safety in laboratories - Storage of chemicals

Section 8 - Exposure Controls and Personal Protection

Exposure limits
NZ - Workplace Exposure Standards and Biological Exposure Indices (6th edition). New Zealand Department of Labor

Component	New Zealand WEL
Sodium hydroxide	Ceiling: 2 mg/m³

Biological limit values
This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Engineering Measures
Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection — Goggles (Australian/New Zealand Standard AS/NZS 1337 - Eye protectors for Industrial applications)

Hand Protection — Protective gloves

Glove material	Breakthrough time	Glove thickness	AUS/NZ Standard	Glove comments
Natural rubber, Nitrile rubber, Neoprene, PVC.	See manufacturers recommendations	-	AS/NZS 2161.1	(minimum requirement)

Inspect gloves before use.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)
Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.
Remove gloves with care avoiding skin contamination.

Skin and body protection Long sleeved clothing

Repiratory Protection Use an AS/NZS 1716 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained in line with AS/NZS 1715 on the use and maintenance of repiratory protective devices

Recommended Filter type: Particulates filter conforming to EN 143 (or AUS/NZ equivalent)

Recommended half mask:- Particle filtering: EN149:2001 (or AUS/NZ equivalent)
When RPE is used a face piece Fit Test should be conducted

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls Prevent product from entering drains. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained.

Section 9 - Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance	White	
Physical State	Powder Solid	
Odor	Odorless	
Odor Threshold	No data available	
pH	Not applicable	
Melting Point/Range	180 - 200 °C / 356 - 392 °F	
Softening Point	No data available	
Boiling Point/Range	No information available	
Flash Point	No information available	**Method -** No information available
Evaporation Rate	Not applicable	Solid
Flammability (solid,gas)	No information available	
Explosion Limits	No data available	
Vapor Pressure	No information available	
Vapor Density	Not applicable	Solid
Specific Gravity / Density	No data available	
Bulk Density	No data available	
Water Solubility	390 g/L (17°C)	
Solubility in other solvents	No information available	

Partition Coefficient (n-octanol/water)

Component	**log Pow**
Sodium chlorite	-2.7
Sodium sulfate	-3

Autoignition Temperature	Not applicable	
Decomposition Temperature	180 °C	
Viscosity	Not applicable	Solid
Explosive Properties	No information available	
Oxidizing Properties	Oxidizer	

Other information

Molecular Formula	Cl Na O2
Molecular Weight	90.44

Section 10 - Stability and Reactivity

Reactivity Yes

Contact with acids liberates very toxic gas

Stability Oxidizer: Contact with combustible/organic material may cause fire. Hygroscopic.

Conditions to Avoid Incompatible products, Exposure to moist air or water, Excess heat, Combustible material.

Incompatible Materials Organic materials, Powdered metals, Strong reducing agents, Combustible material.

Hazardous Decomposition Products Hydrogen chloride gas. Sodium oxides.

Hazardous Polymerization Hazardous polymerization does not occur.

Section 11 - Toxicological Information

Information on Toxicological Effects

Product Information

(a) acute toxicity;

Oral Category 3

Dermal Category 2

Inhalation Based on available data, the classification criteria are not met

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium chlorite	LD50 = 165 mg/kg (Rat)	LD50 = 107.2 mg/kg (Rabbit)	LC50 = 230 mg/m³ (Rat) 4 h
Sodium chloride	LD50 = 3 g/kg (Rat)	LD50 > 10 g/kg (Rabbit)	LC50 > 42 g/m³ (Rat) 1 h
Sodium carbonate	2800 mg/kg (Rat)	> 2000 mg/kg (rabbit)	2.3 mg/l 2h (Rat)
Sodium sulfate	LD50 > 10000 mg/kg (Rat)	LD50 > 4 g/kg (Rabbit)	
Sodium hydroxide	LD50 140 - 340 mg/kg (Rat)	1350 mg/kg (Rabbit)	
Sodium chlorate	LD50 = 6250 mg/kg (Rat) LD50 = 4950 mg/kg (Rat)	LD50 > 10 g/kg (Rabbit) LD50 > 2000 mg/kg (Rabbit)	LC50 > 28 g/m³ (Rat) 1 h LC50 > 5.59 mg/L (Rat) 4.5 h

(b) skin corrosion/irritation; Category 1 B

(c) serious eye damage/irritation; Category 1

(d) respiratory or skin sensitization;

Respiratory No data available

Skin No data available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; No data available

There are no known carcinogenic chemicals in this product

(g) reproductive toxicity; No data available

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; Category 2

Target Organs No information available.
(j) aspiration hazard; Not applicable
Solid

Other Adverse Effects The toxicological properties have not been fully investigated.

Symptoms / effects,both acute and delayed Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

Section 12 - Ecological Information

Ecotoxicity effects The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Sodium chlorite	LC50: > 100 mg/L, 96h static (Lepomis macrochirus) LC50: > 100 mg/L, 96h static (Oncorhynchus mykiss) LC50: 100 - 500 mg/L, 96h static (Brachydanio rerio)	EC50: = 0.026 mg/L, 48h (Daphnia magna) EC50: 0.25 - 0.33 mg/L, 48h Flow through (Daphnia magna) EC50: 0.012 - 0.018 mg/L, 48h Static (Daphnia magna)		
Sodium chloride	Pimephals prome: LC50: 7650 mg/L/96h	EC50: 1000 mg/L/48h		
Sodium carbonate	Lepomis macrochirus: LC50: 300 mg/L/96h Gambusia affinis: LC50: 740 mg/L/96h	EC50: = 265 mg/L, 48h (Daphnia magna)	EC50: = 242 mg/L, 120h (Nitzschia)	-
Sodium sulfate	Pimephales promelas: LC50: 13.5 - 14.5 g/L/96h	EC50: 4547 mg/L/96h EC50: 2564 mg/L/48h EC50: 4547 mg/L/96h	-	-
Sodium hydroxide	LC50: = 45.4 mg/L, 96h static (Oncorhynchus mykiss)			
Sodium chlorate	LC50: = 7090 mg/L, 96h (Cyprinus carpio) LC50: = 4200 mg/L, 24h (Oncorhynchus mykiss) LC50: = 1750 mg/L, 96h (Oncorhynchus mykiss) LC50: = 13500 mg/L, 96h (Pimephales promelas)	EC50: = 1093 mg/L, 24h (Daphnia magna)		

Persistence and Degradability
Persistence Soluble in water, Persistence is unlikely, based on information available.
Degradability Not relevant for inorganic substances.
Degradation in sewage treatment plant Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.
Bioaccumulative Potential Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Sodium chlorite	-2.7	No data available
Sodium sulfate	-3	No data available

Mobility The product is water soluble, and may spread in water systems. Will likely be mobile in the environment due to its water solubility. Highly mobile in soils
Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors
Persistent Organic Pollutant This product does not contain any known or suspected substance
Ozone Depletion Potential This product does not contain any known or suspected substance

Section 13 - Disposal Considerations

Waste from Residues / Unused Products

Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Wastes, including emptied containers, are controlled wastes and should be disposed of in accordance with all federal, E.P.A., state and local regulations. Assure conformity with all applicable regulations.

Contaminated Packaging

Dispose of this container to hazardous or special waste collection point.

Other Information

Disposal agencies or waste contractors must comply with the New Zealand Hazardous Substances (Disposal) Regulations . Do not dispose of waste into sewer. Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms. Do not let this chemical enter the environment.

Section 14 - Transport Information

IMDG/IMO

UN-No UN1496
Proper Shipping Name SODIUM CHLORITE
Hazard Class 5.1
Packing Group II

NZS 5433:2012

UN-No UN1496
Proper Shipping Name SODIUM CHLORITE
Hazard Class 5.1
Packing Group II

Component	Hazchem Code
Sodium chlorite 7758-19-2 (70-90)	1Y
Sodium hydroxide 1310-73-2 (< 1)	2W 2R
Sodium chlorate 7775-09-9 (< 1)	1Y 2Y

IATA

UN-No UN1496
Proper Shipping Name SODIUM CHLORITE
Hazard Class 5.1
Packing Group II

Environmental hazards

Dangerous for the environment
Product is a marine pollutant according to the criteria set by IMDG/IMO

Special Precautions

No special precautions required

Additional information

None known

Section 15 - Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

Component	HSNO Approval Number
Sodium chlorite	HSR001349

Sodium chloride	HSR002722
Sodium carbonate	HSR003265
Sodium hydroxide	HSR001547
Sodium chlorate	HSR001348

International Inventories X = listed

Component	NZIoC	AICS	EINECS	ELINCS	TSCA	DSL	NDSL	PICCS	ENCS	IECSC	KECL
Sodium chlorite	X	X	231-836-6	-	X	X	-	X	X	X	X
Sodium chloride	X	X	231-598-3	-	X	X	-	X	X	X	X
Sodium carbonate	X	X	207-838-8	-	X	X	-	X	X	X	X
Sodium sulfate	X	X	231-820-9	-	X	X	-	X	X	X	X
Sodium hydroxide	X	X	215-185-5	-	X	X	-	X	X	X	X
Sodium chlorate	X	X	231-887-4	-	X	X	-	X	X	X	X

Prohibition or notification/licensing requirements Shown below are details of specific prohibition/notifications or licencing requirements when they apply.

Section 16 - Other Information

This safety data sheet complies with the requirements of WorkSafe New Zealand Regulations

Legend

AICS - Australian Inventory of Chemical Substances
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
IECSC - Chinese Inventory of Existing Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
TWA - Time Weighted Average
IARC - International Agency for Research on Cancer
ICAO/IATA - International Civil Aviation Organization/International Air Transport Association
MARPOL - International Convention for the Prevention of Pollution from Ships
NZS 5433:2012 - Transport of Dangerous Goods on Land
LD50 - Lethal Dose 50%
EC50 - Effective Concentration 50%
WEL - Workplace Exposure Limit
DNEL - Derived No Effect Level
POW - Partition coefficient Octanol:Water
vPvB - very Persistent, very Bioaccumulative
VOC - Volatile Organic Compounds

NZIoC - New Zealand Inventory of Chemicals
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
ENCS - Japanese Existing and New Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
CAS - Chemical Abstracts Service
ACGIH - American Conference of Governmental Industrial Hygienists
PNEC - Predicted No Effect Concentration
IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code
OECD - Organisation for Economic Co-operation and Development
LC50 - Lethal Concentration 50%
ATE - Acute Toxicity Estimate
RPE - Respiratory Protective Equipment
NOEC - No Observed Effect Concentration
BCF - Bioconcentration factor
PBT - Persistent, Bioaccumulative, Toxic

Key literature references and sources for data
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Training Advice
Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.
Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.
First aid for chemical exposure, including the use of eye wash and safety showers.
Chemical incident response training.

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Revision Date 23-May-2018
Revision Summary SDS sections updated.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet